

INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

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VEB Werk fuer Fernmeldewesen WF, Berlin-Oberschoeneweide

1. The following transmitter tubes are in the course of development:

- a. SRS 451 : 250 watt anode dissipation; cut-off frequency 200 mcs
- b. SRS 452 : 100 " " " " " 300 mcs
- c. SRS 551 : 40 " " " " " 500 mcs
- d. SRS 552 : 40 " " " " " 600 mcs

Of these, (c) and (d) are power amplifiers.

2. The following list gives technical data of VHF transmitter tubes which have been turned over to the production department:

	Unit	SRL 351	SRL 352	SRL 353	SRL 354
Heating voltage	V	5	7.5	5.3	9
Heating current	A	50	72	160	160
Mutual conductance	mA /V	14	20	40	40
measured as anode voltage	kV	2.5	2.5	3	3
measured as anode current	A	1	1	1	1
Reciprocal of amplification factor	%	3.2	4.3	2.5	2.5
measured as anode voltage	kV	2-4	2-4	3-5	3-5
measured as anode current	A	1	1	1	1
Capacity: cathode control grid	pF	17	22	59	55
Capacity: cathode anode	pF	0.19	0.4	0.8	0.8
Capacity: control grid anode	pF	9	11	35	25

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STATE	X	ARMY	EV	X	NAVY	X	AIR	EV	X	FBI		AEC		OSI	EV	X
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	Unit	SRL 351	SRL 352	SRL 353	SRL 354
Maximum anode voltage	kV	4.5	6	7	7
Maximum cathode current	A	1.2	2	5	7
Maximum anode dissipation	kW	2	2.5	10	10
Maximum control grid dissipation	W	80	150	400	400
Cut-off wave length	m	1	1.5	1.5	1.3
Cut-off frequency	Mcs	300	200	200	250

3. The following miniature tubes are under development in the Special Tubes Laboratory:

DC 94	EC 92	ECC 81
EF 80 ¹	EY 86	EL 83
PCL 81	FY 81	

4. The miniature tubes EF 89 and UF 89 were turned over to the production department in June 1955 and FCC 84 and ECC 84 in July 1955; the monthly production is running at about 10,000 of each. EF 89 and UF 89 figured originally in an export order for Turkey, but this has since been cancelled.² EY 86 and DC 94 will be transferred to the production department in the first and second quarters respectively of 1956.
5. The reject rate for miniature tubes varies from about 40%, in the case of EABC 80 and UABC 80, to about 25%, in the case of EF 89; the average is probably about 27%. For broadcast tubes, the rate has dropped from the 1954 figure of 30% to 25%.

VEB Funkwerk Erfurt

1. The following miniature tubes are under development:³

ECC 83 - VHF amplifier	ECC 85 - VHF amplifier
EY 82 - rectifier	EY 51 - rectifier
EY 82 - rectifier	EZ 80 - rectifier

2. The EL 84 was turned over to the Erfurt production department some months ago; the rectifier tubes are to go into production at VEB Roehrenwerk Muehlhausen. The greater part of the output of VEB Funkwerk Erfurt consists of broadcast tubes and long wave transmitter tubes of old types.

3. The following subminiature tubes have been developed on the orders of the Ministry of the Interior and are said to be for use in rockets:

EC 76 - directly-heated triode	EF 70 - indirectly-heated pentode
EF 72 - indirectly-heated pentode	EF 73 - indirectly-heated pentode
EY 76 - indirectly-heated rectifier	

4. After three years' work, involving the expenditure of 3,000,000 DME, the development work on the so-called "gnome series" - a hobby of the development chief Dr. Ing. Heinze - has been stopped, because the series did not correspond to any international type and could only have been used in specially designed instruments.⁴

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Comments:

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1. [redacted] 21,600 EF-80 tubes were produced during the fourth quarter of 1954.

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2. [redacted]

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3. The EY-51, EY-82, and EZ-80 tubes were reported in production in October 1954. It is probable that the enterprise has been having production difficulties. [redacted]

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4. Comments: This series, called the 176 series during World War II, was the first, now long outmoded, attempt to build a series of miniature tubes on the basis of existing glass tubes. Although Telefunken originally produced these tubes in Erfurt, VEB Funkwerk Erfurt alleges it is responsible for the development of these tubes.

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